

<sup>B</sup>  
Phaeophyta, comprising from about 20% to 97%, by weight, of said composition, <sup>and</sup>  
One or more plant materials selected from ~~the~~ plant families Gossypium and  
Cannabaceae, comprising from about 3% to 80%, by weight, of said composition.

25. A chemical composition in accordance with Claim 24, further comprising an  
ammonium-free source of inorganic nitrogen <sup>in an amount of</sup> from about 0.5% to 7.5%, by weight, of the ~~same~~  
composition, whereby said ammonium-free source of inorganic nitrogen ~~comprises one~~  
~~or more~~ selected from the group consisting of sodium nitrate, sodium-potassium nitrate,  
and potassium nitrate.

26. A chemical composition in accordance with Claim 24, further comprising a source of  
complex, biologically hydrolyzable nutrient phosphorus <sup>in an amount of</sup> from about 0.25% to 15%, by  
weight, of said composition, whereby said source of complex, biologically hydrolyzable  
nutrient phosphorus ~~comprises one or more~~ selected from the group consisting of ringed  
metaphosphates and linear polyphosphates.

27. A chemical composition in accordance with Claim 24, whereby said source of complex,  
biologically hydrolyzable nutrient phosphorus ~~comprises one or more~~ further selected from  
the group consisting of sodium hexametaphosphate, sodium trimetaphosphate, sodium  
tripolyphosphate, sodium-potassium tripolyphosphate, and tetrasodium pyrophosphate.

28. A chemical composition in accordance with Claim 24, further comprising a source of  
chelating agents <sup>in an amount of</sup> from about 0.01% to 5%, by weight, of said composition, whereby said  
chelating agents ~~comprise one or more~~ selected from the group consisting of citric acid,  
humic acid, fulvic acid, sodium citrate, nitrilotriacetic acid (NTA), and  
ethylenediaminetetraacetic acid (EDTA).

29. A chemical composition in accordance with Claim 24, further comprising <sup>comprising</sup> inoculum for one  
or more microorganisms <sup>wherein the inoculum is in an amount of</sup> from about 0.001% to 2%, by weight, of said composition,  
whereby said microorganisms are selected from the group consisting of soil bacteria,  
metal-reducing bacteria, legume-related bacteria, plant-fiber degrading bacteria and  
plant-fiber degrading fungi.

30. A chemical composition in accordance with Claim 24, further comprising one or more

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0.5% to 7.5%  
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OK

31

no support

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in an amount of  
OK plant materials from about 0.5% to 30%, by weight, of said composition selected from the group consisting of the <sup>plants</sup> families *Triticum* and *Aegilops*.  
wherein <sup>new</sup> plant materials are

31. A chemical composition in accordance with Claim 24, whereby said plant materials from the plant family *Leguminosae* <sup>are</sup> ~~comprise one or more further~~ selected from the group consisting of *Lespedeza* spp., *Medicago* spp., *Vicia* spp., *Glycine* spp., *Lathyrus* spp. and *Trifolium* spp.  
OK for all or part of clarifying a plant sp. see glycine is aaaaaa, in spec too

32. A chemical composition in accordance with Claim 24, whereby said plant materials from the plant family *Phaeophyta* <sup>are</sup> ~~comprise one or more further~~ selected from the ~~group consisting of~~ *Sargassum* spp.  
oh dp a few

33. A chemical composition in accordance with Claim 24, whereby said plant materials from the plant family *Gossypium* are ~~one or more further~~ selected from the group consisting of cotton lint (and other fibrous cotton-containing materials produced by the cultivation or processing of cotton) cotton plants, and cotton seed.  
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34. A chemical composition in accordance with Claim 24, whereby said plant materials from the plant family *Cannabaceae* are ~~one or more further~~ selected from the group consisting of plant materials from hemp or hops plants.  
oh dp a few

35. A chemical composition in accordance with Claim 29, whereby said inoculum <sup>is</sup> ~~for microorganisms comprise one or more further~~ selected from the group consisting of "yellow boy" and other biogeochemically produced ferric oxides, hydroxides and oxyhydroxides produced from acid-mine drainage wastes or the treatment thereof.

36. A chemical composition in accordance with Claim 29, whereby said microorganisms <sup>are</sup> ~~comprise one or more further~~ selected from the group consisting of *Rhizobium* spp., *Bradyrhizobium* spp., *Fibrobacter* spp., *Clostridium* spp., *Pseudomonas* spp., *Geobacter* spp. and *Thiobacillus* spp.  
oh dp a few

37. A chemical composition in accordance with Claim 30, whereby said plant materials are ~~one or more~~ selected from the group consisting of wheat, oats, barley, and rye.  
of the plant family

38. A chemical composition in accordance with Claim 24, whereby ~~the forms of~~ <sup>in a form</sup> said plant materials are ~~one or more~~ selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
39. A chemical composition in accordance with Claim 30, whereby ~~the forms of~~ <sup>in a form</sup> said plant materials are ~~one or more~~ selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
40. A chemical composition in accordance with Claim 31, whereby ~~the forms of~~ <sup>in a form</sup> said plant materials are ~~one or more~~ selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
41. A chemical composition in accordance with Claim 32, whereby ~~the forms of~~ <sup>in a form</sup> said plant materials are ~~one or more~~ selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
42. A chemical composition in accordance with Claim 33, whereby ~~the forms of~~ <sup>in a form</sup> said plant materials are ~~one or more~~ selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
43. A chemical composition in accordance with Claim 34, whereby ~~the forms of~~ <sup>in a form</sup> said plant materials are ~~one or more~~ selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
44. A chemical composition in accordance with Claim 24, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
45. A chemical composition in accordance with Claim 25, whereby ~~the~~ said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
46. A chemical composition in accordance with Claim 26, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes,

pellets, tablets, and capsules.

47. A chemical composition in accordance with Claim 27, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
48. A chemical composition in accordance with Claim 28, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
49. A chemical composition in accordance with Claim 29, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
50. A chemical composition in accordance with Claim 30, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
51. A chemical composition in accordance with Claim 31, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
52. A chemical composition in accordance with Claim 32, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
53. A chemical composition in accordance with Claim 33, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
54. A chemical composition in accordance with Claim 34, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.

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57. A chemical composition in accordance with Claim 37, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
58. A chemical composition in accordance with Claim 38, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
59. A chemical composition in accordance with Claim 39, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
60. A chemical composition in accordance with Claim 40, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
61. A chemical composition in accordance with Claim 41, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
62. A chemical composition in accordance with Claim 42, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
63. A chemical composition in accordance with Claim 43, whereby said composition is prepared as one or more forms selected from the group consisting of granules, briquettes,

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pellets, tablets, and capsules.

64. A chemical composition in accordance with Claim 24, whereby ~~the forms of~~ said plant materials <sup>are in a form</sup> ~~comprise one or more~~ selected from the group consisting of dehydrated, dried and freeze-dried forms.

65. A chemical composition in accordance with Claim 29, whereby ~~the forms of~~ said inoculum <sup>is in a form</sup> ~~for microorganisms comprise one or more~~ selected from the group consisting of dehydrated, dried and freeze-dried forms.

66. A chemical composition in accordance with Claim 24, further comprising a binding agent <sup>an amt of</sup> from about 0.1% to 7%, by weight, of said composition.

67. A chemical composition in accordance with Claim 66, whereby said binding agent <sup>is</sup> ~~comprises one or more~~ selected from the group consisting of pre-gelled starch, starch, molasses, barley malt extract, corn syrup, vegetable oils, vegetable fats, animal oils, animal fats, animal lards, glycerin, gelatine, bentonite, montmorillonite, kaolinite, and calcium carbonate.

68. A chemical composition in accordance with Claim 24, whereby said plant materials are cultivated *in-situ* within contaminated environmental media.

69. A chemical composition in accordance with Claim 30, whereby said plant materials are cultivated *in-situ* within contaminated environmental media.

70. A chemical composition in accordance with Claim 31, whereby said plant materials are cultivated *in-situ* within contaminated environmental media.

71. A chemical composition in accordance with Claim 32, whereby said plant materials are cultivated *in-situ* within contaminated environmental media.

72. A chemical composition in accordance with Claim 33, whereby said plant materials are cultivated *in-situ* within contaminated environmental media.